

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	Art Unit:
)	
THIEL, et al.)	Examiner:
)	
Appl. No.: 10/537,507)	Washington, D.C.
)	
Filed: June 3, 2005)	April 19, 2006
)	
For: METHOD FOR DETERMINING)	Docket No.: THIEL=3
PREDISPOSITION TO)	
MANIFESTATION OF...)	Confirmation No.: 4712

RESPONSE TO NOTIFICATION OF DEFECTIVE RESPONSE

U.S. Patent and Trademark Office
 Customer Service Window
 Randolph Building, Mail Stop Missing Parts
 401 Dulany Street
 Alexandria, VA 22314

Sir:

In response to the Notice of Defective Response mailed March 28, 2006, please amend the application as follows:

IN THE SEQUENCE LISTING

Please substitute the attached Sequence Listing, numbered as pages 1-7 for the Sequence Listing previously submitted.

REMARKS

1. Applicants hereby submit the following:
 - [XX] a paper copy of a "Sequence Listing", complying with §1.821(c), to be incorporated into the specification as directed above;
 - [] an amendment to the paper copy of the "Sequence Listing" submitted on December 2, 2005, the amendment being in the form of substitute sheets;
 - [XX] the Sequence Listing in computer readable form,

complying with §1.821(e) and §1.824, including, if an amendment to the paper copy is submitted, all previously submitted data with the amendment incorporated therein;

[] a substitute computer readable form to replace one found to be damaged or unreadable.

[] The computer readable form in this application no. 09/... is identical with that filed on [date sequence was filed] in application no. 09/ , filed [filing date]. In accordance with 37 C.F.R. §1.821(e), please use the [first-filed, last-filed or only, whichever is applicable] computer readable form filed in that application as the computer readable form for the instant application. It is understood that the Patent and Trademark Office will make the necessary change in application number and filing date for the instant application. A paper copy of the Sequence Listing is [included in the originally-filed specification of the instant application, included in a separately filed preliminary amendment for incorporation into the specification, whichever is applicable].

2. The description is believed to be in compliance with §1.821(d).

3. The undersigned attorney or agent hereby states as follows:

- (a) this submission does not include new matter [§1.821(g)];
- (b) the contents of the paper copy (as amended, if

applicable) and the computer readable form of the Sequence Listing, are the same [§1.821(f) and §1.825(b)];

- (c) if the paper copy has been amended, the amendment is supported by the specification and does not include new matter [§1.825(a)]; and
- (d) if the computer readable form submitted herewith is a substitute for a form found upon receipt by the PTO to be damaged or unreadable, that the substitute data is identical to that originally filed [§1.825(d)].

4. Under U.S. rules, each sequence must be classified in <213> as an "Artificial Sequence", a sequence of "Unknown" origin, or a sequence originating in a particular organism, identified by its scientific name.

Neither the rules nor the MPEP clarify the nature of the relationship which must exist between a listed sequence and an organism for that organism to be identified as the origin of the sequence under <213>.

Hence, counsel may choose to identify a listed sequence as associated with a particular organism even though that sequence does not occur in nature by itself in that organism (it may be, e.g., an epitopic fragment of a naturally occurring protein, or a cDNA of a naturally occurring mRNA, or even a substitution mutant of a naturally occurring sequence). Hence, the identification of an organism in <213> should not be construed as an admission that the sequence *per se* occurs in nature in said organism.

Similarly, designation of a sequence as "artificial" should not be construed as a representation that the sequence

USSN - 10/537,507

has no association with any organism. For example, a primer or probe may be designated as "artificial" even though it is necessarily complementary to some target sequence, which may occur in nature. Or an "artificial" sequence may be a substitution mutant of a natural sequence, or a chimera of two or more natural sequences, or a cDNA (i.e., intron-free sequence) corresponding to an intron-containing gene, or otherwise a fragment of a natural sequence.

The Examiner should be able to judge the relationship of the enumerated sequences to natural sequences by giving full consideration to the specification, the art cited therein, any further art cited in an IDS, and the results of his or her sequence search against a database containing known natural sequences.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.
Attorneys for Applicant(s)

By: 

Iver P. Cooper
Registration No. 28,005

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G:\ipc\g-i\hoib\THIEL3\pto resp seqlist.wpd



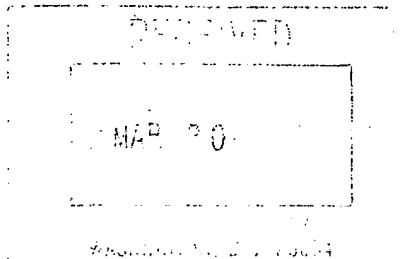
UNITED STATES PATENT AND TRADEMARK OFFICE

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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
10/537,507	Steffen Thiel	THIEL3

1444

BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303



INTERNATIONAL APPLICATION NO.	
PCT/DK03/00827	
I.A. FILING DATE	PRIORITY DATE
12/02/2003	12/03/2002

CONFIRMATION NO. 4712
371 FORMALITIES LETTER



OC000000018384695

Date Mailed: 03/28/2006

NOTIFICATION OF DEFECTIVE RESPONSE

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495)

- Priority Document
- Copy of the International Application filed on 06/03/2005
- Copy of the International Search Report filed on 06/03/2005
- Copy of IPE Report filed on 06/03/2005
- Copy of Annexes to the IPEER filed on 06/03/2005
- Preliminary Amendments filed on 12/02/2005
- Biochemical Sequence Diskette filed on 03/09/2006
- Oath or Declaration filed on 06/03/2005
- Biochemical Sequence Listing filed on 03/09/2006
- Request for Immediate Examination filed on 06/03/2005
- U.S. Basic National Fees filed on 06/03/2005
- Priority Documents filed on 06/03/2005
- Specification filed on 06/03/2005
- Claims filed on 06/03/2005
- Drawings filed on 06/03/2005

SEQ 4/28/06
SES 5/2/06

DOCKETED

Applicant's response filed 03/09/2006 is hereby acknowledged. The following requirements set forth in the NOTIFICATION of MISSING REQUIREMENTS mailed 10/03/2005 have not been completed.

- The paper or compact disc copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 CFR 1.821(e). Applicant must provide a substitute paper or compact disc copy of the "Sequence Listing", as well as an amendment specifically directing its entry into the application OR a substitute computer readable form (CRF) copy of the "Sequence Listing". These two items must be the same. Applicant must also provide a statement that the content of the sequence listing information recorded in computer readable form is identical to the written (on paper or compact disc) sequence listing and, where applicable, includes no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b), or 1.825(d). If the effective filing date is on or after September 8, 2000, see the final rulemaking notice published in the Federal Register at 65 FR 54604 (September 8, 2000) and 1238 OG 145 (September 19, 2000).

- A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 CFR 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing." Applicant must provide a substitute computer readable form (CRF) copy of the "Sequence Listing" and a statement that the content of the sequence listing information recorded in computer readable form is identical to the written (on paper or compact disc) sequence listing and, where applicable, includes no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b), or 1.825(d).

Applicant is required to complete the response within a time limit of ONE MONTH from the date of this Notification or within the time remaining in the response set forth in the Notification of Missing Requirements, whichever is the longer. No extension of this time limit may be granted under 37 CFR 1.136, but the period for response set in the Notification of Missing Requirements may be extended under 37 CFR 1.136(a).

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:

- **For Rules Interpretation, call (571) 272-0951**
- **For Patent Software Program Help, call Patent EBC at 1-866-217-9197 or directly at 703-305-3028 / 703-308-6845 between the hours of 6 a.m. and 12 midnight, Monday through Friday, EST.**
- **Send e-mail correspondence for Patent Software Program Help @ ebc@uspto.gov**

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

*A copy of this notice **MUST** be returned with the response.*

KAYA L LEWIS BALTIMORE

Telephone: (703) 308-9140 EXT 202

PART 1 - ATTORNEY/APPLICANT COPY

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
10/537,507	PCT/DK03/00827	THIEL3

STIC Biotechnology Systems Branch

RAW SEQUENCE LISTING **ERROR REPORT**

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/537,507
Source: PG
Date Processed by STIC: 3/9/06

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE **CHECKER VERSION 4.4.0 PROGRAM**, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail. Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<**<http://www.uspto.gov/ebc/efs/downloads/documents.htm>**> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05):
U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

Revised 01/10/06

Raw Sequence Listing Error Summary

ERROR DETECTED

SUGGESTED CORRECTION

SERIAL NUMBER:

10/537,507

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 Wrapped Nucleics The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
- 2 J Invalid Line Length The rules require that a line **not exceed** 72 characters in length. This includes white spaces.
- 3 Misaligned Amino The numbering under each 5th amino acid is misaligned. Do **not** use tab codes between numbers; use **space characters**, instead.
- 4 Non-ASCII The submitted file was **not** saved in ASCII(DOS) text, as **required** by the Sequence Rules. **Please ensure your subsequent submission is saved in ASCII text.**
- 5 Variable Length Sequence(s) contain n's or Xaa's representing more than one residue. **Per Sequence Rules, each n or Xaa can only represent a single residue.** Please present the **maximum** number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
- 6 PatentIn 2.0 A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) . Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. **This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.**
- 7 Skipped Sequences Sequence(s) missing. If intentional, please insert the following lines for **each** skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
(i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)
(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
This sequence is intentionally skipped
Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to **include** the skipped sequences.
- 8 Skipped Sequences Sequence(s) missing. If **intentional**, please insert the following lines for **each** skipped sequence.
(NEW RULES) <210> sequence id number
 <400> sequence id number
 000
- 9 Use of n's or Xaa's Use of n's and/or Xaa's have been detected in the Sequence Listing.
(NEW RULES) Per 1.823 of Sequence Rules, use of <220>-<223> is **MANDATORY** if n's or Xaa's are present.
 In <220> to <223> section, please explain location of **n** or **Xaa**, and which residue **n** or **Xaa** represents.
- 10 J Invalid <213> Per 1.823 of Sequence Rules, the only **valid** <213> responses are: Unknown, Artificial Sequence, or
 Response scientific name (Genus/species). <220>-<223> section is **required** when <213> response is Unknown or is Artificial Sequence. (see item 11 below)
- 11 Use of <220> Sequence(s) missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is **MANDATORY** if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section or use "chemically synthesized" as explanation. (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32), also Sec. 1.823 of Sequence Rules
- 12 PatentIn 2.0 Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
- 13 Misuse of n/Xaa "n" can **only** represent a single nucleotide; "Xaa" can **only** represent a single amino acid



PCT

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/537,507

DATE: 03/09/2006

TIME: 12:36:38

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03092006\J537507.raw

*see item 2 on
Even summary
sheet*

3 <110> APPLICANT: Aarhus Universitet
5 <120> TITLE OF INVENTION: Method for determining predisposition to
manifestation of immune system
6 related diseases

8 <130> FILE REFERENCE: P 706 DK 02

C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/537,507

C--> 10 <141> CURRENT FILING DATE: 2005-06-03

10 <160> NUMBER OF SEQ ID NOS: 8

12 <170> SOFTWARE: PatentIn version 3.1

14 <210> SEQ ID NO: 1

15 <211> LENGTH: 671

16 <212> TYPE: PRT

17 <213> ORGANISM: Homo sapiens; mature MASP-2

19 <400> SEQUENCE: 1

21 Thr Pro Leu Gly Pro Lys Trp Pro Glu Pro Val Phe Gly Arg Leu Ala

22 1 5 10 15

25 Ser Pro Gly Phe Pro Gly Glu Tyr Ala Asn Asp Gln Glu Arg Trp

26 20 25 30

29 Thr Leu Thr Ala Pro Pro Gly Tyr Arg Leu Arg Leu Tyr Phe Thr His

30 35 40 45

33 Phe Asp Leu Glu Leu Ser His Leu Cys Glu Tyr Asp Phe Val Lys Leu

34 50 55 60

37 Ser Ser Gly Ala Lys Val Leu Ala Thr Leu Cys Gly Gln Glu Ser Thr

38 65 70 75 80

41 Asp Thr Glu Arg Ala Pro Gly Lys Asp Thr Phe Tyr Ser Leu Gly Ser

42 85 90 95

45 Ser Leu Asp Ile Thr Phe Arg Ser Asp Tyr Ser Asn Glu Lys Pro Phe

46 100 105 110

49 Thr Gly Phe Glu Ala Phe Tyr Ala Ala Glu Asp Ile Asp Glu Cys Gln

50 115 120 125

53 Val Ala Pro Gly Glu Ala Pro Thr Cys Asp His His Cys His Asn His

54 130 135 140

57 Leu Gly Gly Phe Tyr Cys Ser Cys Arg Ala Gly Tyr Val Leu His Arg

58 145 150 155 160

61 Asn Lys Arg Thr Cys Ser Ala Leu Cys Ser Gly Gln Val Phe Thr Gln

62 165 170 175

65 Arg Ser Gly Glu Leu Ser Ser Pro Glu Tyr Pro Arg Pro Tyr Pro Lys

66 180 185 190

69 Leu Ser Ser Cys Thr Tyr Ser Ile Ser Leu Glu Glu Gly Phe Ser Val

70 195 200 205

73 Ile Leu Asp Phe Val Glu Ser Phe Asp Val Glu Thr His Pro Glu Thr

74 210 215 220

77 Leu Cys Pro Tyr Asp Phe Leu Lys Ile Gln Thr Asp Arg Glu Glu His

78 225 230 235 240

**Does Not Comply
Corrected Diskette Needed**

pp 3-5

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/537,507

DATE: 03/09/2006

TIME: 12:36:38

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03092006\J537507.raw

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81 Gly Pro Phe Cys Gly Lys Thr Leu Pro His Arg Ile Glu Thr Lys Ser
82          245          250          255
85 Asn Thr Val Thr Ile Thr Phe Val Thr Asp Glu Ser Gly Asp His Thr
86          260          265          270
89 Gly Trp Lys Ile His Tyr Thr Ser Thr Ala Gln Pro Cys Pro Tyr Pro
90          275          280          285
93 Met Ala Pro Pro Asn Gly His Val Ser Pro Val Gln Ala Lys Tyr Ile
94          290          295          300
97 Leu Lys Asp Ser Phe Ser Ile Phe Cys Glu Thr Gly Tyr Glu Leu Leu
98 305          310          315          320
101 Gln Gly His Leu Pro Leu Lys Ser Phe Thr Ala Val Cys Gln Lys Asp
102          325          330          335
105 Gly Ser Trp Asp Arg Pro Met Pro Ala Cys Ser Ile Val Asp Cys Gly
106          340          345          350
109 Pro Pro Asp Asp Leu Pro Ser Gly Arg Val Glu Tyr Ile Thr Gly Pro
110          355          360          365
113 Gly Val Thr Thr Tyr Lys Ala Val Ile Gln Tyr Ser Cys Glu Glu Thr
114          370          375          380
117 Phe Tyr Thr Met Lys Val Asn Asp Gly Lys Tyr Val Cys Glu Ala Asp
118 385          390          395          400
121 Gly Phe Trp Thr Ser Ser Lys Gly Glu Lys Ser Leu Pro Val Cys Glu
122          405          410          415
125 Pro Val Cys Gly Leu Ser Ala Arg Thr Thr Gly Gly Arg Ile Tyr Gly
126          420          425          430
129 Gly Gln Lys Ala Lys Pro Gly Asp Phe Pro Trp Gln Val Leu Ile Leu
130          435          440          445
133 Gly Gly Thr Thr Ala Ala Gly Ala Leu Leu Tyr Asp Asn Trp Val Leu
134          450          455          460
137 Thr Ala Ala His Ala Val Tyr Glu Gln Lys His Asp Ala Ser Ala Leu
138 465          470          475          480
141 Asp Ile Arg Met Gly Thr Leu Lys Arg Leu Ser Pro His Tyr Thr Gln
142          485          490          495
145 Ala Trp Ser Glu Ala Val Phe Ile His Glu Gly Tyr Thr His Asp Ala
146          500          505          510
149 Gly Phe Asp Asn Asp Ile Ala Leu Ile Lys Leu Asn Asn Lys Val Val
150          515          520          525
153 Ile Asn Ser Asn Ile Thr Pro Ile Cys Leu Pro Arg Lys Glu Ala Glu
154          530          535          540
157 Ser Phe Met Arg Thr Asp Asp Ile Gly Thr Ala Ser Gly Trp Gly Leu
158 545          550          555          560
161 Thr Gln Arg Gly Phe Leu Ala Arg Asn Leu Met Tyr Val Asp Ile Pro
162          565          570          575
165 Ile Val Asp His Gln Lys Cys Thr Ala Ala Tyr Glu Lys Pro Pro Tyr
166          580          585          590
169 Pro Arg Gly Ser Val Thr Ala Asn Met Leu Cys Ala Gly Leu Glu Ser
170          595          600          605
173 Gly Gly Lys Asp Ser Cys Arg Gly Asp Ser Gly Gly Ala Leu Val Phe
174          610          615          620
177 Leu Asp Ser Glu Thr Glu Arg Trp Phe Val Gly Gly Ile Val Ser Trp

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/537,507

DATE: 03/09/2006

TIME: 12:36:38

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03092006\J537507.raw

```

178 625          630          635          640
181 Gly Ser Met Asn Cys Gly Glu Ala Gly Gln Tyr Gly Val Tyr Thr Lys
182          645          650          655
185 Val Ile Asn Tyr Ile Pro Trp Ile Glu Asn Ile Ile Ser Asp Phe
186          660          665          670
189 <210> SEQ ID NO: 2
190 <211> LENGTH: 170
191 <212> TYPE: PRT
192 <213> ORGANISM: mature MAP-19 (human)
194 <400> SEQUENCE: 2
196 Thr Pro Leu Gly Pro Lys Trp Pro Glu Pro Val Phe Gly Arg Leu Ala
197 1          5          10          15
200 Ser Pro Gly Phe Pro Gly Glu Tyr Ala Asn Asp Gln Glu Arg Arg Trp
201          20          25          30
204 Thr Leu Thr Ala Pro Pro Gly Tyr Arg Leu Arg Leu Tyr Phe Thr His
205          35          40          45
208 Phe Asp Leu Glu Leu Ser His Leu Cys Glu Tyr Asp Phe Val Lys Leu
209          50          55          60
212 Ser Ser Gly Ala Lys Val Leu Ala Thr Leu Cys Gly Gln Glu Ser Thr
213 65          70          75          80
216 Asp Thr Glu Arg Ala Pro Gly Lys Asp Thr Phe Tyr Ser Leu Gly Ser
217          85          90          95
220 Ser Leu Asp Ile Thr Phe Arg Ser Asp Tyr Ser Asn Glu Lys Pro Phe
221          100          105          110
224 Thr Gly Phe Glu Ala Phe Tyr Ala Ala Glu Asp Ile Asp Glu Cys Gln
225          115          120          125
228 Val Ala Pro Gly Glu Ala Pro Thr Cys Asp His His Cys His Asn His
229          130          135          140
232 Leu Gly Gly Phe Tyr Cys Ser Cys Arg Ala Gly Tyr Val Leu His Arg
233 145          150          155          160
236 Asn Lys Arg Thr Cys Ser Glu Gln Ser Leu
237          165          170
240 <210> SEQ ID NO: 3
241 <211> LENGTH: 2061
242 <212> TYPE: DNA
243 <213> ORGANISM: cDNA MASP-2
245 <400> SEQUENCE: 3
246 atgaggtctg tgacctctt gggccttctg tgtggctcgg tggccacccc cttgggcccg 60
248 aagtggcctg aacctgtgtt cgggcgcctg gcatcccccg gctttccagg ggagtatgcc 120
250 aatgaccagg agcggcgctg gacctgact gcaccccccg gctaccgctt gcgcctctac 180
252 ttcacccact tcgacctgga gctctccac ctctgcgagt acgacttcgt caagctgagc 240
254 tcggggggcca aggtgctggc cacgctgtgc gggcaggaga gcacagacac ggagcggggc 300
256 cctggcaagg acactttcta ctgctgggc tcacgcctgg acattacctt ccgctccgac 360
258 tactccaacg agaagccggt caccgggttc gaggccttct atgcagccga ggacattgac 420
260 gagtggccagg tggccccggg agaggcgccc acctgcgacc accactgcca caaccacctg 480
262 ggcggtttct actgctctg ccgcgcaggc tacgtcctgc accgtaacaa gcgcacctgc 540
264 tcagccctgt gctccggcca ggtcttcacc cagaggtctg gggagctcag cagccctgaa 600
266 taccacggc cgtatcccaa actctccagt tgcattaca gcatcagcct ggaggagggg 660
268 ttcagtgtca ttctggactt tgtggagtcc ttcgatgtgg agacacaccc tgaaaccctg 720

```

invalid <213> response. see item 10 on End Summary sheet.

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/537,507

DATE: 03/09/2006

TIME: 12:36:38

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03092006\J537507.raw

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270 tgtccctacg actttctcaa gattcaaaca gacagagaag aacatggccc attctgtggg 780
272 aagacattgc cccacaggat tgaaacaaaa agcaacacgg tgaccatcac ctttgtcaca 840
274 gatgaatcag gagaccacac aggetggaag atccactaca cgagcacagc gcagccttgc 900
276 ccttatccga tggcgccacc taatggccac gtttcacctg tgcaagccaa atacatcctg 960
278 aaagacagct tctccatctt ttgcgagact ggctatgagc ttctgcaagg tcaactgccc 1020
280 ctgaaatcct ttactgcagt ttgtcagaaa gatggatctt gggaccggcc aatgcccgcg 1080
282 tgcagcattg ttgactgtgg ccctcctgat gatctacca gtggccgagt ggagtacatc 1140
284 acaggctcctg gagtgaccac ctacaaagct gtgattcagt acagctgtga agagaccttc 1200
286 tacacaatga aagtgaatga tggtaaatat gtgtgtgagg ctgatggatt ctggacgagc 1260
288 tccaaaggag aaaaatcact ccagctctgt gagcctgttt gtggactatc agcccgcaca 1320
290 acaggagggc gtatatatgg agggcaaaaag gcaaaacctg gtgattttcc ttggcaagtc 1380
292 ctgatattag gtggaaccac agcagcagg gtgacttttat atgacaactg ggtcctaaca 1440
294 gctgctcatg ccgtctatga gcaaaaacat gatgcacccg ccctggacat tccaatgggc 1500
296 accctgaaaa gactatcacc tcattataca caagcctggg ctgaagctgt ttttatacat 1560
298 gaaggttata ctcgatgatg tggccttgac aatgacatag cactgattaa attgaataac 1620
300 aaagttgtaa tcaatagcaa catcacgcct atttgtctgc caagaaaaga agctgaatcc 1680
302 tttatgagga cagatgacat tggaaactgca tctggatggg gattaaccca aaggggtttt 1740
304 cttgctagaa atctaattgta tgtcgacata ccgattgttg accatcaaaa atgtactgct 1800
306 gcatatgaaa agccacccta tccaaaggga agtgtaactg ctaacatgct ttgtgctggc 1860
308 ttagaaagtg ggggcaagga cagctgcaga ggtgacagcg gaggggcact ggtgtttcta 1920
310 gatagtgaaa cagagaggtg gtttgtggga ggaatagtgt cctgggggttc catgaattgt 1980
312 ggggaagcag gtcagtatgg agtctacaca aaagttatta actatattcc ctggatcgag 2040
314 aacataatta gtgattttta a 2061

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317 <210> SEQ ID NO: 4

318 <211> LENGTH: 558

319 <212> TYPE: DNA

320 <213> ORGANISM: cDNA MAP-19

same env

322 <400> SEQUENCE: 4

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323 atgaggetgc tgaccctcct gggccttctg tgtggctcgg tggccacccc cttgggcccg 60
325 aagtggcctg aacctgtgtt cgggcgcctg gcatcccccg gctttccagg ggagtatgcc 120
327 aatgaccagg agcggcgctg gaccctgact gcaccccccg gctaccgcct gcgcctctac 180
329 ttcacccact tgcacctgga gctctccac ctctgcgagt acgacttcgt caagctgagc 240
331 tcggggggcca aggtgctggc cagcctgtgc gggcaggaga gcacagacac ggagcggggc 300
333 cctgccaagg acactttcta ctgcgtgggc tccagcctgg acattacctt ccgctccgac 360
335 tactccaacg agaagccgtt caggggggtc gaggccttct atgcagccga ggacattgac 420
337 gagtgccagg tggccccggg agaggcgccc acctgcgacc accactgcca caaccacctg 480
339 ggcggtttct actgctcctg ccgcgcaggc tacgtcctgc accgtaacaa gcgcacctgc 540
341 tcagagcaga gcctctag 558

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344 <210> SEQ ID NO: 5

345 <211> LENGTH: 21

346 <212> TYPE: DNA

347 <213> ORGANISM: upper PCR primer

349 <400> SEQUENCE: 5

350 gcgagtacga cttcgtcaag g

21

353 <210> SEQ ID NO: 6

354 <211> LENGTH: 21

355 <212> TYPE: DNA

356 <213> ORGANISM: lower PCR primer

358 <400> SEQUENCE: 6

RAW SEQUENCE LISTING

DATE: 03/09/2006

PATENT APPLICATION: US/10/537,507

TIME: 12:36:38

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03092006\J537507.raw

359 ctcggttgca tagaaggcct c 21
362 <210> SEQ ID NO: 7
363 <211> LENGTH: 21
364 <212> TYPE: DNA
365 <213> ORGANISM: upper PCR primer
367 <400> SEQUENCE: 7
368 ccagaccttt ggaaagttag c 21
371 <210> SEQ ID NO: 8
372 <211> LENGTH: 21
373 <212> TYPE: DNA
374 <213> ORGANISM: lower PCR primer
376 <400> SEQUENCE: 8
377 ggctcaagtt ccaagtattg c 21

VERIFICATION SUMMARY

DATE: 03/09/2006

PATENT APPLICATION: US/10/537,507

TIME: 12:36:39

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03092006\J537507.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application No

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date